

**IN THE CLAIMS:**

1. (Currently Amended) A drive method of a CCD color image sensor comprising a plurality of sensor sections, each of which has a color filter different from each other and each of which comprises: a photoelectric conversion element group, operable to receive light so as to generate charge including signal charge and unnecessary charge based on the light and operable to accumulate the charge; a shift register, operable to transfer the charge to an output section; and a shift gate, arranged between the photoelectric conversion element group and the shift register, the drive method comprising the steps of:

transferring the signal charges accumulated in each photoelectric conversion element group of each color to a shift register by opening each shift gate of each color after transferring unnecessary charges in the photoelectric conversion element group of each color in the shift register

..... transferring the signal charge from the shift register to the output section in a state that the shift gate is closed;

..... transferring the unnecessary charge in the photoelectric conversion element group to the shift register and the unnecessary charge from the shift register to the output section in a state that the shift gate is opened; and

..... transferring the unnecessary charge from the shift register to the output section while accumulating the signal charge in the photoelectric conversion element group in a state that the shift gate is closed, wherein

..... the necessary charge is transferred from the shift register to the output section

in a time period that is set for each sensor section and is different for each sensor section

—— during the time period of transferring the signal charges in the photoelectric conversion element group of each color in the shift register, shutting the shift gate of each color and accumulating unnecessary charges in the photoelectric conversion element group of each color;

—— opening the shift gate of each color and transferring the unnecessary charges occurring in the photoelectric conversion element group of each color to the shift register; and

—— sequentially shutting the shift gates of colors and continuing to shut each of the shift gates in response to the time period set for each color, thereby accumulating the signal charges in the photoelectric conversion element group of each color.

2. (Original) A drive method of a CCD color image sensor, comprising the steps of:

transferring unnecessary charges occurring in a photoelectric conversion element group of each color in a shift register in a time period of accumulating signal charges in the photoelectric conversion element group of each color; and

transferring the signal charges accumulated in the photoelectric conversion element group of each color in response to a different time period for each color set in the photoelectric conversion element group of each color in the shift register in the time period of accumulating the unnecessary charges in the photoelectric conversion element group of each color.

3. (Currently Amended) A color image input apparatus comprising:

a CCD color image sensor, comprising a plurality of sensor sections, each of which has a color filter different from each other and each of which comprises:

~~including~~ a photoelectric conversion element group, operable to receive light so as to generate charge including signal charge and unnecessary charge based on the light and operable to accumulate the charge of each color; a shift gate of each color; and a shift register of each color;

..... a shift register, operable to transfer the charge to an output section;

..... a shift gate, arranged between the photoelectric conversion element group and the shift register; and

..... a controller that means for transferring transfers the signal charges accumulated in the each photoelectric conversion element group of each color to the each shift register by opening the each shift gate of each color after transferring unnecessary charges in the photoelectric conversion element group of each color to the shift register;

—— means for, during the time period of transferring the signal charges in the photoelectric conversion element group of each color to the shift register, shutting the shift gate of each color and accumulating unnecessary charges in the photoelectric conversion element group of each color;

—— means for opening the shift gate of each color and transferring the unnecessary charges occurring in the photoelectric conversion element group of each color to the shift register; and

\_\_\_\_\_ means for shutting the shift gates of colors in order and continuing to shut each of the shift gates in response to the time period set for each color, thereby accumulating the signal charges in the photoelectric conversion element group of each color

\_\_\_\_\_ transfers the signal charge from the shift register to the output section in a state that the shift gate is closed;

\_\_\_\_\_ transfers the unnecessary charge in the photoelectric conversion element group to the shift register and the unnecessary charge from the shift register to the output section in a state that the shift gate is opened; and

\_\_\_\_\_ transfers the unnecessary charge from the shift register to the output section while accumulating the signal charge in the photoelectric conversion element group in a state that the shift gate is closed, wherein

\_\_\_\_\_ the necessary charge is transferred from the shift register to the output section in a time period that is set for each sensor section and is different for each sensor section.

4. (Original) A color image input apparatus comprising:

a CCD color image sensor including a photoelectric conversion element group of each color and a shift register of each color;

means for transferring unnecessary charges occurring in a photoelectric conversion element group of each color in a shift register in a time period of accumulating signal charges in the photoelectric conversion element group of each color; and

means for transferring the signal charges accumulated in the photoelectric conversion element group of each color in response to a different time period for each color set in the photoelectric conversion element group of each color in the shift register in the time period of accumulating the unnecessary charges in the photoelectric conversion element group of each color..